

REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of September 11, 2003.

All of the Examiner's objections and rejections are traversed.

Reexamination and reconsideration are respectfully requested.

The Office Action

Claims 1-11, 21, and 22 remain in this application. Claims 12-20 have been cancelled. New claims 23-31 have been added.

Claims 6 and 22 are rejected under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Claims 1-3, 6-13, 15-16, and 18-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Macken (U.S. Patent No. 4,458,133).

Claims 1-2, 6, 9-12, and 15-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Beresford (U.S. Patent No. 3,617,683).

Claims 1-2, 6, 9-12, and 15-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Provancher (U.S. Patent No. 4,262,186).

Claims 4-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Macken and over Beresford.

Claims 1-11 and 21-31 are Distinguished From the Cited Art

Macken teaches scanning the entire template 18 with a laser beam 24 in order to vaporize the material 16 exposed to the laser beam 24 through openings 20 in the template 18. On the other hand, the present application teaches projecting a cutting element 36 to pass through the template(s) 16, 20, without intersecting with the template(s) 16, 20, to cut through the member 10 in a pattern corresponding to the template(s) 16, 20, as illustrated by claims 1, 9, 21, and 23.

Macken also teaches using magnets 12 and magnetic fields to hold the stack of sheets 16 (i.e. cloth or paper) to be cut in place before a laser is used to engrave them. Macken, however, does not teach using two templates to sandwich the member to be cut as in new claim 28 of the present application (Fig. 5). Unlike Macken, the present application also teaches using low-tack surfaces for mildly adhering to the thin film assembly 10 as in new claims 23 and 29; whereas, Macken

teaches using the application of pressure from two support plates 10, 14 and magnetic fields to align the sheets 16 of material with the template 18 to avoid changes during laser cutting (col. 3, lines 8-16).

Additionally, Macken teaches cutting through a 10-sheet stack 16 of paper, without utilizing additional templates in between each sheet of paper to be cut. However, the present application teaches using a polymeric member 16 (template) in between each thin film member 10 to be cut, when more than one member 10 is to be cut (Fig. 6) as in new claim 27.

Beresford teaches laser safety and how to accurately position a work piece on a worktable with the use of a probe. Beresford teaches a method for safely using a laser, such as enclosing the work piece, providing remote manipulation of the laser (col. 1, lines 49-53), and shrouding the laser beam to prevent stray emission (col. 2, line 4). Unlike Beresford, the present application does not require the use of a probe to help locate the member to be cut with the template or support base as can be noted in claims 1, 21, and 23, since they teach adhering the member to a template and/or base, with no mention of a probe for guidance.

The present application does not use a shutter control 70 or a probe 40. Beresford also teaches that the laser system 20 be located beneath the worktable 30 and the work piece 10. Beresford further teaches how to correctly focus the laser beam 20. Moreover, Beresford only teaches the use of one template 50 and a baseplate 60, and does not teach sandwiching a work piece between two templates as in new claim 28 of the present application.

Further, Beresford does not teach adhering a member to a template as noted in claims 1, 7, and 23 of the present application.

Provancher teaches a method of preparing material to be chem-milled. Chem-milling is a metal removal process that is applied to fabricated parts and raw materials in order to reduce their weight. Provancher teaches coating all of the exposed surfaces of the sheet material 10 with a chem-mill resistant maskant 12. The laser beam 18 is only used to burn away the maskant 12 coated on the material 10. The template 14 is then removed so that the material 10 can be chem-milled. After which, the remaining maskant 12 is removed from the now perforated material 10.

Unlike Provancher, however, the present application does not require a maskant coating on both sides of the member 10 to be cut, which is because

present application does not teach using a chem-milling process, as noted by claims 1, 21, and 23 since it is not mentioned. Also, the maskant that is cut-out by the laser and the material underneath that is chem-milled from Provancher is discarded, because the goal of the Provancher is to achieve a perforated sheet of material that has uniform hole size (col. 1, lines 29-35) as illustrated by Fig. 5. In contrast, the present application discards the main portions of the material (12, 14) that remain under the template(s) 16, 20 and keeps the cut-out pieces (13, 15) that are cut from the member 10 (12, 14) with the cutting element 36, as illustrated by new claim 23 and Figures 8-15.

Provancher also does not utilize a polymeric base 18 for support when only one template 16 is in use as noted in claims 21 and 29 of the present application and illustrated by Figures 4, 7, 8, and 9.

In addition, Provancher does not teach a method of transferring member formations, formed by the cutting element, to a separate location as noted in claims 10 and 31 and illustrated by Figures 10-13.

New claims 23-31 have been added to further clarify the present application. Claim 25 is further discussed in the present application on page 11, lines 21-26.

CONCLUSION

For the reasons detailed above, it is respectfully submitted all claims remaining in the application (Claims 1-11 and 21-31) are now in condition for allowance. The foregoing comments do not require unnecessary additional search or examination.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to call Mark S. Svat, at Telephone Number (216) 861-5582.

Respectfully submitted,

FAY, SHARPE, FAGAN,
MINNICH & McKEE, LLP



Mark S. Svat
Reg. No. 34,261
1100 Superior Avenue, 7th Floor
Cleveland, Ohio 44114-2579
(216) 861-5582

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Date

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